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ABSTRACT

The United States Training and Employment Service General Aptitude Test Battery (GATB), first published in 1947, has been included in a continuing program of research to validate the tests against success in many different occupations. The GATB consists of 12 tests which measure nine aptitudes: General Learning Ability; Verbal Aptitude; Numerical Aptitude; Spatial Aptitude; Form Perception; Clerical Perception; Motor Coordination; Finger Dexterity; and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, and a standard deviation of 20. Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, when combined, predict job performance. Cutting scores are set only for those aptitudes which aid in predicting the performance of the job duties of the experimental sample. The GATB norms described are appropriate only for jobs with content similar to that shown in the job description presented in this report. A description of the validation sample is included. (AG)

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GATB # 2390

STANDARDIZATION OF THE GENERAL APTITUDE TEST BATTERY

FOR

POLICEMAN (gov. ser.) 2-66.23

B-~~513~~ S-236

(Supersedes B-471)

SUMMARY

The General Aptitude Test Battery was administered to two samples of Policeman 2-66.23 for the purpose of validating and cross-validating occupational norms. The year of criterion collection and the number included in each final sample is shown below.

Sample	Year	N
Validation (California)	1962	166
Cross-Validation (Wisconsin)	1961	64

GATB Norms for Policeman 2-66.23, B-513

B-1001			B-1002		
Aptitude	Tests	Minimum Acceptable Aptitude Score	Aptitude	Tests	Minimum Acceptable Aptitude Score
G	CB-1-H CB-1-I CB-1-J	100	G	Part 3 Part 4 Part 6	95
P	CB-1-A CB-1-L	100	P	Part 5 Part 7	100
Q	CB-1-B	90	Q	Part 1	90

Effectiveness of Norms

The data in Table IV indicate that 28 of the 53 poor workers, or 53 percent of them, did not achieve the minimum scores established as cutting scores on the recommended test norms. This shows that 53 percent of the poor workers would not have been hired if the recommended test norms had been used in the selection process. Moreover, 79 of the 104 workers who made qualifying test scores, or 76 percent, were good workers.

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I. Purpose

This study was conducted to determine the best combination of aptitudes and minimum scores to be used as norms on the General Aptitude Test Battery for the occupation of Policeman 2-66.23.

II. Sample

Validation Sample - California

The Los Angeles City Police Department agreed to provide a sufficient number of police officers to conduct a test study for Policeman (gov. ser.) 2-66.23. The Department maintains a police academy in Los Angeles, California which conducts a year-round Advanced Officer Training School. All divisions and bureaus of the Department detail officers to the school for a two week course designed for refresher training in police techniques, police policies, and criminal law. To be eligible for the course, an officer must be below the rank of sergeant and must have completed the one year probationary period required after graduation from recruit status. During the period of 1-10-61 through 6-6-61, the GATB, B-1002A, was administered to a sample of 239 police officers enrolled in the Police Academy of the Los Angeles City Police Department, Los Angeles, California. A total of 73 officers were eliminated from the sample: 70 because of not performing work comparable to the rest of the sample and 3 because of invalid test scores. Therefore, the final sample consisted of 166 male Policemen 2-66.23.

In cooperation with the Civil Service Department, the Police Department conducts an active recruitment program to hire police recruits. Job applicants submit an application to the Civil Service Examining Division and are scheduled for a written examination. The two-hour examination consists of 100 multiple choice questions to test for general knowledge of governmental operations, judgment decisions involved in hypothetical police situations, reading comprehension, numerical reasoning, sentence constructions, spelling, and grammar. Applicants who pass the written test are orally interviewed by a board consisting of three members. Applicants recommended by the oral board are given a medical examination and a psychological test if there is a question of emotional stability. A physical agility test is required. The test is conducted in the field and is comprised of activities which test for endurance, coordination, and general physical fitness. A background investigation is conducted by the Police Department to ascertain whether the applicant possesses social and moral qualities acceptable to the Department.

Applicants must be 21 by the time of appointment and not have reached their 31st birthday by the date of the written examination. A high school diploma, or high school equivalency as established by G.E.D. test, is required. Prior experience in police or investigate work is not required. Recruit policemen receive a 12-week training course in police theory, police techniques and law. Upon graduation from recruit school, the officers are placed on probation for one year and receive on-the-job training under close supervision whileparticipating in actual police situations.

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II. Sample

Cross-Validation Sample - Wisconsin

The GATB, B-1002A, was administered during April 1961 to 69 male Patrolmen employed by the Green Bay, Wisconsin, Police and Fire Commission. Five of the sample were eliminated; three because their main duty was supervision and two because of lack of experience. High school graduation is a requirement for this occupation. No tests were used in the selection process; personal interview before a panel, a check or references and school achievement were the only factors given consideration. The average training time for this occupation is considered to be 24 months; all the Patrolmen in this sample are considered as experienced.

TABLE I-A

Means (M), Standard Deviations (σ), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education and Experience

Validation Sample - California

N = 166	M	σ	Range	r
Age (years)	32.8	6.1	25-53	-.135
Education (years)	13.2	1.7	8-19	-.052
Experience (months)	90.1	57.2	24-291	-.133

TABLE II-A

Means (M), Standard Deviations (σ), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education and Experience

Cross-Validation Sample - Wisconsin

N = 64	M	σ	Range	r
Age (years)	37.2	5.9	25-54	-.070
Education (years)	11.5	1.6	7-15	.143
Experience (months)	129.8	59.4	30-310	.034

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III. Job Description

Job Title: Policeman (gov. ser.) 2-66.23

Job Summary: Performs general police duties to enforce laws and ordinances, preserve peace and order, prevent crime, and protect life and property by investigating and making arrests, directing and controlling traffic, keeping records and preparing reports, processing and controlling prisoners, and testifying in court.

Work Performed: Performs duties of radio-car patrolman in an assigned area to observe activities of public and detect unlawful incidents. Pursues and apprehends suspected violators of traffic and criminal statutes on foot, motorcycle, or in patrol car or wagon. May arrest, search, and interrogate suspects observed committing illegal or suspicious acts. Escorts suspects to jail and prepares reports.

Performs duties of parking and intersection control officer by directing vehicular and pedestrain traffic at busy intersections. Issues warnings and citations for parking and moving traffic violations. Investigates violators for possible influence of alcohol or drugs.

Performs duties of plain clothes officer in an assigned area to observe activities of public and detect violators relative to gambling, prostitution, and liquor sales.

Performs duties of accident investigating officer in an assigned area to detect violations of traffic codes and investigate accidents.

May act as jailor, in which case, receives, searches, removes personal property of, and books prisoners. Processes jail records, fingerprints, and oversees feeding of prisoners.

Testifies in court by presenting evidence as a witness on cases in which prior involvement occurred.

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IV. Experimental Battery

All the tests of the GATB, B-1002A, were administered to the sample group.

V. Criterion

Validation Sample - California

The criterion consisted of first and second-line supervisory ratings made on an adaption of the Descriptive Rating Scale developed by the United States Employment Service, Form SP-21. The first-line supervisors, Watch Sergeants, and the second-line supervisors, Lieutenant Watch Commanders, made independent ratings. Criterion ratings were collected during the period February 9, 1961 through June 19, 1961. The rating scale consisted of ten items with five alternatives for each item. The alternatives indicated the degree of job proficiency attained. Weights of one through five were assigned to each alternative. The coefficient of reliability between the two ratings was .663. The final criterion score consisted of the combined scores of the two ratings; the distribution of the combined scores ranged from 44 to 96, with a mean score of 74.9 and a standard deviation of 9.9.

Cross-Validation - Wisconsin

The criterion consisted of supervisory ratings made on an adaption of the Descriptive Rating Scale developed by the USES, Form SP-21. Ratings were made by the Captain and Lieutenant who supervised the Patrolmen during August 1961 and September 1962. The rating scale consisted of 14 items with 5 alternatives for each item. The alternatives indicated the degree of job proficiency obtained. Weights of 1 through 5 were assigned to each alternative. A coefficient reliability between the two ratings was .50. The final criterion consisted of the combined scores of the two ratings; distribution of the combined scores ranged from 56 to 125, with a mean score of 93.6 and a standard deviation of 12.3.

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VI. Qualitative and Quantitative Analyses

A. Qualitative Analysis:

The job analysis indicated that the following aptitudes measured by the GATB appear to be important for this occupation.

Intelligence (G) - required to acquire and retain knowledge of statutes, codes and ordinances applicable to police work and to understand their underlying principles; to learn and apply knowledge of the laws of arrest, search and seizure; to learn the general principles of the laws of rules of evidence and to be able to determine the nature, kind and significance of evidence found at scene of crime or accident; needed to apply reasoning and make independent judgments in deciding what actions to take when confronted with events or conditions requiring police actions; needed to testify intelligently in courts.

Verbal (V) - necessary to read and understand statutes, codes, ordinances, and departmental orders; needed to interrogate persons in a clear and meaningful manner; required to understand and prepare reports which require narrative reconstructions of criminal events and descriptions of police actions taken; needed to express himself concisely in courts.

Form Perception (P) - ability to perceive pertinent details in configurations of persons or objects in order to detect unusual situations or circumstances which might indicate crimes or potential infractions of laws; needed to identify and describe evidence and to make visual comparisons and discriminations in reporting law violations and accidents.

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B. Quantitative Analysis:

TABLE II

Means (M), Standard Deviations (σ), and Pearson Product-Moment Correlations with the Criterion (r) for the Aptitudes of the GATB; N = 166
Validation Sample (California)

Aptitudes	M	σ	r
G-Intelligence	112.1	10.0	.092
V-Verbal Aptitude	110.4	10.3	-.035
N-Numerical Aptitude	106.2	11.2	.119
S-Spatial Aptitude	111.5	16.8	.151
P-Form Perception	107.7	14.6	.199*
Q-Clerical Perception	106.0	11.0	.035
K-Motor Coordination	112.0	14.4	.065
F-Finger Dexterity	100.5	18.2	.042
M-Manual Dexterity	117.1	16.4	-.097

*Significant at the .05 level

C. Selection of Test Norms:

Validation Sample

TABLE III

Summary of Qualitative and Quantitative Data

Type of Evidence	Aptitudes								
	G	V	N	S	P	Q	K	F	M
Job Analysis Data									
Important	X	X			X	X			X
Irrelevant									
Relatively High Mean	X			X			X		X
Relatively Low Sigma	X	X	X			X			
Significant Correlation with Criterion					X				
Aptitudes to be Considered for Trial Norms	G	V			P	Q			M

Trial norms consisting of various combinations of Aptitudes G,V,P,Q & M with appropriate cutting scores were evaluated against the criterion by means of the Phi Coefficient technique. A comparison of the results showed that B-1002 norms consisting of G-95, P-100 and Q-90 had the best selective efficiency.